Fig 3. Annotated sequence of the paralogue cluster

```
        |   10     |   20     |   30     |   40     |   50     |   60     |   70     |   80
  1  ccatgggagc agcatcgcag tgcgcctccc cgccgccat gccgctagct ggtagtcccc ctgccgggtg ccgaccgccg    80
                                              stop sensor kinase
 81  gggcggtccc gggtgcggcg gccggatcta gtccggtgtc tccgacggtg cctgctggt gagggcagt gtcaggcgga   160
161  tggtggttcc cgcgccgggc gggctgtgca gccgcagttg gccgccgagt gcctccaccc ggtcggttag gccgacgagg   240
241  cccgagcccc ggcaggggc gggcgccaccg cggccgtcgt cgcggatgcc gacgtggagc cgtccgtccc gggtggccac   320
321  atggacgtcg acgacggtgg caccggagtg cttggcggcg ttggtcaggg cctcggagac ggcgtagtac gcggcggtct   400
401  cgaccggttc gggtggcgt tccccggtct ggatgtcgag ccggaccggg atggcggagc gccgggccag ggccttgagc   480
481  gccggggcga gtccgccctc ggcgagtacc gccgggtgga tgccccgggc gacctcccgg agttcgtcga cggcgcaccc   560
561  cagcccgtcg gtcacctcgt cgagctgccg gatcagctcg tcggcgtcga gcggcaccga cagttgcacg gtgcgcaccc   640
641  gcagcgccag ggagaccagg cgctgttggg ggccgtcgtg caggtcgcgt tcgatacggc ggcgggcggt gtcggcggcg   720
721  gcgacgatcc gggcccgtga cgcggtgagg gccgcctgcg tctcccgtt ggcgatggcg gtggcacca gttcggtgaa   800
801  gccggccagc cggtcctcgg tgtccgacgg catcggcttg tcgttcatcg acgccacgct gagcgcgccc cacagttgtc   880
881  cgtcgacgtt gatcggcatg cacaccgtgg cgcggaatcc ccactccttg ccgacgacgg aggccggccc cgaggacacg   960
961  gccggctagt cgtcgatccg cgccgggcag cccgactcga acaccagggt gtgcacattc cggccgccgg gcggtacctg  1040
1041 gataccggcg ggaaaatcac ggccggtcct ggtccaggcg gcgacataca gggcggttcc gttgggctcg taacggccga  1120
1121 ggaccggcaa gtcggccgag aggagctgtc cggcctcggc ggcgaccgcg gcgaacacct ccttcggcgg tgccgcccgc  1200
1201 gcgaccaggg tcgccacgcg ccgcagccgc gcctgctcct cggcggcccc ccgcagctcc acacgtgcct gggtgttcgc  1280
```

3a/3

REPLACEMENT SHEET

```
1281 gatggcggtg gccacgaggt cggtgaaacc ggccagccgg  tcctcggtgt cgggcggcag cggttccgcg gtcagcgaga 1360
1361 tcgccatcat cacgccccac agccgtccct cgacgttgat  cggcacgccg acgaccgaac cgaagccgcg cgccctgccg 1440
1441 AAGTCGGCGG GTGCCCCGGA CGACTCGGCG GCGTCGTCGA  TCCGGGCCGG CCGCCCCGTC TCGGACACCA GCGTCACCAC 1520
1521 GTTCCGGCCG TCGGGGTCCA CCCGGGTGCC GATGGGGAAG  AGCGGGCCGT GCAGACTTCT GGACCAGCCG CCGACGGCGC 1600
1601 TCGCCATGCC GTCCGGATCG AGCCTGATGA TTCCGGTCAC  ATCGTTGCCG AGCAGTTCTC CGACTTCGGC GGCGACCGTC 1680
                                                                                      start
1681 GCGAACATCT GTTCCGGTGG GGTGGCCCTG GCCACCAGGG  TCGCCACCCG TCGGAGTGCC GCCCGCTCCT CGACGATCTG 1760
sensor kinase →
1761 TTCGCACGAC ACGACCGCTG CCAGG[CCCC C]TACCCGCCC GATGACGCCC GCATACCGGG TATCACGGCA CATCAGCATG 1840
1841 ACGTCCGCCG TGAACGTGGC CCGCCGGAGT TCAACGTGGC  CGTCCGGAAT CAGCCCCCGG AACGGCGGGA 1920
1921 CCGTCTTCCT CCGTCCGGCG CGGGGCACTG CGCCGCGGCG  TGACCTCGGG AGTTTGCAGC TAGCTGGAAT 2000
2001 CAGCGGTTCG GGTTGGTGGG AAGGGATGTT GGCCGCTGGC  AAGCCGATCG TTCCCAGTAC TTCTGGGAAG 2080
2081 TGCCGTCGCG AGAGTCGGTC CGCTTCCCCG AGTGGGCCGC  GGGGTTCTCC ACGGGGGAGA GATCCGCGAA 2160
2161 CCGGCGAAGG AGCTGCCGTG TCGGACGTCT TCGCATCCGA  CCCGGGTGTCC GGACCGGCGC GGCAACGTCC 2240
                                                               start of cvm7par →
2241 CCACCGCGCT CTGTCATCAG CGCCGTCGGC GCCGTCAGCC  ACGC[AGAGAA GA]TCGGATAC GCAGTGTACG AGTGCAGCGA 2320
2321 TGAGGTTCGT CACGACGTCC CCGGCCTGCC GGGTCCGTCA  CCGTCCATCA CCGTCCTGGG CTGTCTGGGC GTACGCGCCG 2400
2401 ACGGCCGGAA ACTGGAGCTG GGCCCTCCGC GTCAGCGGGC  CGTTTTCGCC CTGCTGCTCA TCAACGCGGG CAGTGTGTTG 2480
2481 CCGGTCGACt cgatcgtctt ccgtatctgg ggcaactcac  caccgggcgc ggtcaccgcg acgctccagt cctatgtgtc 2560
```

3b/3

REPLACEMENT SHEET

```
2561  ccggctgcgg  aaactcctgg  ccgagtgtgt  gctcccggac  ggttcgacac  ccgaactgct  gcaccagccg  ccgggctaca  2640
2641  ccctcgcgct  cggcaccgag  cacatcgacg  cgaaccgttt  tgagcaggcc  atcaggacag  ggcgccggct  ctcgcgcgag  2720
2721  gagcagcacc  aggaggcgcg  ggccgtgctc  tgccaggccc  tgctgagctg  gggcgggaca  ccgtacgagg  agctgagcgc  2800
2801  gtacgacttc  gccgtccagg  aggccaatcg  gctggagcag  ctccgctgg  gcgccgtgga  gacatgggcg  cactgctgtc  2880
2881  tgcggctggg  gcgggacgag  gaggTGATGG  ACCAGCTCAA  GCCGGAGGTG  CAGCGCAATC  CGCTGCGGGA  GCGGCTGAATC  2960
2961  GGGCAGCTCA  TGCAGGCGCA  GTACCGGCTG  GGGTGCCAGG  CGGACGCGCT  CAGGACGTAC  GAGGCGACGC  GGCGGGCCCT  3040
3041  GGCCGAGGAG  CTGGGGACCG  ATCCGGGCAA  GGAGCTGGGCG  GCGCTGCACG  CGGCGATCCT  GCGTCAGGAC  AACGGTCTGG  3120
3121  ACCGGCGTCGT  CCCGGCGTCC  GCGCCGCCGT  CGGCGGGGGT  CGGGCGGGGG  GCCGTGACGG  TGTCGGTCCC  GGCACAGCGG  3200
3201  TCGAGGCCGT  TGACGCGGCC  GGTGGCGGGG  CGGGCGCGGG  TCCCGGGGGC  GATGACGGTG  GCGGGCGGCG  CGGGGGCGGC  3280
3281  CCCGCGGTCC  GCCTCCGGCT  CCGTTTCCGC  GTCCGTTTCC  GGCTCCGGCT  CCGGCTCCGG  CTCCGCTCCT  GCGTCGGTTC  3360
3361  CCACCTTCTT  TCCCGGCTCC  GTTTCTGGCT  CGGCGTCCGT  TGCCCGCGTCC  GTAGCCGCGC  CCGTTTCCGG  CCATGTCTCC  3440
3441  GGGCCCGGGT  CCGCTTTCGG  GTCCGTGGCG  CTCCACCGGC  CGCAGACCCT  CCGGGGCGAG  CCGGTCCACG  GGGGCGCGCA  3520
3521  GGGGATGCGC  ACCGGGCAGG  TGTTCCCCAC  GCTGCCGCCG  TTCGTCGGGC  GCGGCGACGA  GCTgcgcggt  ctgctggagt  3600
3601  ccgcgacgtc  cgcgttccac  acctcggggc  gggtggcgtt  cgtcgtcggc  gaggcgggca  gcggcaagac  ccggctcctc  3680
3681  tccgagttgg  agcgctcggt  tccggacagt  gtgcgcaccg  tctgttcggag  agtgaggacc  ggcccgacta  3760
3761  ctggccgtgg  acgaccgtgc  tgcggcatct  gtacgccgatg  tggccggaac  gtatgcacgg  attccccggt  tggctgcggc  3840
3841  gcgcactcgc  ggaactgctt  cccgagtgg  gcccggagcc  acaggggccg  cactcccccg  acgggggcga  ggagaacagc  3920
```

3c/3

-12-

REPLACEMENT SHEET

```
3921 ggcaacgggg acggtgcggg cgacggggac agcaccccgg   cgcacaccct cacgctcgcg ccgcgtctcg cgccccgcg 4000
4001 ctccagagag gctccgtttca ccctgcacga cgccgtgtgc   caggcgcttc tgcgcacggt ccgcgaaccc gtggtgatca 4080
4081 tgctggagga catgagcggg gccgacgccc cctcgctcgc   cctgctcgcg ctcctggtgg agcaactgcg caccgtcccc 4160
4161 ctgctgctcg tggtcaccac gcgcaccttc cggctcgcgc   acgacgccga gctgcgacgg gccgccgccg tgatcctcca 4240
4241 gtcgaccgc gcgcgccggg tcctgctgaa cgccctggac   gcacgggcca ccggggaact cgccgagggg atgctgggca 4320
4321 aggccccga caccctcctc gtacggcccc tgcacgagcg   ctccgccggg aacccgtact tcctcgtcca gctcctccgc 4400
4401 tcgctccgc aggggctcgc cgccgcctgg gagacggaga   tccccgacga gctggccggg gtcgtgctgc aacggctgtc 4480
4481 gagcgtgccg cccgccgtgc gccgggtgct cgacatctgc   gcggtcgtgg agcgcagttg cgaacggcgt gtgatcgaga 4560
4561 ccgtgctgcg ccatgaggga atccccgctgg agaacgtccg   tacggcggtc cgcgcgggtc tgctggagga agacccccgac 4640
4641 gaccccgggc ggctgaggtt cgtgcatccg ctggtccggg   aggccgtctg ggacgacctg gagaacaccc gtcggcccgt 4720
               stop cvm7par ──────►
4721 gtccgttcc tccgcgctcg gggcggctgc cacggtctga   gtcccgggcc ccggggtcct cggCGCGGCGGG CGGCGCTTGC 4800
4801 GCGCTCCCCG ACGCCGGGCT TGATCCCCCG GGGCAGCCGG   ACGGCCAGCC GGGTGCAAGG GGCGGTGCCG ACACTGGGCG 4880
4881 GGCGGCGGCC GTGGCCGGTC GCCGCCCCCC ACGGCCCACC   GAGGAGCCCC CATTGGACAC GTACCGCAGCG GATACGTACC 4960
4961 CGCGGTCCGG CACCCACCCC GAGCCGCGTC CCGACGCACC   TCCCCACGCG CGTCCCCGGGA CCCGTCCCGG CACCCGTTCC 5040
                                                                          start cvm6par
                                                                            ▲
5041 GAGCCGCGCC CGGACCCGGG CGCCGAGGCC GCGTGGCTGC   TCGC│GGCGGA│CCGCGCCCAT ATGTTCCACC CGGTCCTGCC 5120
5121 CCGGGGCCGC GAGGACCGCA CCGTTCTCGT CTCCGCCCGC   GGCTGCACCG TACGGGACAC CGAAGGGCGC ACCTATCTCG 5200
```

3d/3

REPLACEMENT SHEET

```
5201 ACGCCTCGTC GGTGCTCGGA CTGACCCAGA TCGGCCATGG ACGTGAGGAG ATCGCGCAGG CCGCCGCCGA GCAGATGCGG 5280
5281 ACACTCGGTC ACTTCCACAC CTGGGGCACC ATCAGCAACG ACAAGGCCAT CCGACTGGCC GCGCGGCCTCA CCGACCTGGC 5360
5361 GCCCCAGGGT CTCCAGCGCG TCTACTTCAC CAGCGGCGGC GGCGAGGGCG TCGAGATCGC CCTGCGCATG GCCCGTTACT 5440
5441 TCCACCACCG CACCGGCAGC CCGGAGCGCA CCTGGATCTT GTCGCGCCGC ACCGCCTACC ACGGCATCGG CTACGGCAGC 5520
5521 GGTACGGTGT CGGGCTCGCC CGCCTACCAG GACGGGTTCG GCCCGGTGCT GCCCCATGTG CACCACCTCA CGCCGCCCGA 5600
5601 CCCGTACCAC GCCGAGCTGT ACGACGGCGA GGACTCACG GAGTACTGCC TGCCCGAACT CGCCCCGCACC ATCGACGAGA 5680
5681 TCGGCCCCGG GCGGATCGCC GCGATGATCG GGGAGCCGGT CATGGGGCGCG GGCGGCGCCG TCGTCCCCGCC GCCCGACTAC 5760
5761 TGGCCGCGCG TCGCCCGCGCT GCTGCGCTCC CACGGCCATCC TGCTGATCCT GGACGAGGTC GTCACCGCGT TCGGCCGCAC 5840
5841 GGGGACCTGG TTCGCGGCCG AGCACTTCGG GGTGACCCCC GATCTGCTGG TGACCGCGAA GGGCATCACC TCCGGGTATG 5920
5921 TCCCGCACGG GGCGGTGCTC CTGACCGAGG AGGTCGCGGA CGCCGTGAAC GGGGAGACGG GGTTCCCGAT CGGCTTCACC 6000
6001 TATACCGGTC ACCCCACGGC GTGCGCCGTC GCGCTCGCCA ATCTCGACAT CATCGAACGG GAAGGGCTGC TGGAGAACGC 6080
6081 GGTGAAGGTG GGCGACCACC TCGCCGGGCG GCTGCGCGCC CTGCGCCGT GCCCGCCGT GGGGGACGTC CGGCAACTGG 6160
6161 GCATGATGCT CGCCGTCGAG CTGGTGTCGG ACAAGACGGC CCGCACCCCG CTGCCGGGCG GCACCCTCGG GGTCGTGGAC 6240
6241 GCGCTGCGCG AGGACGGCGGG CGTCATCGTC CGGGCCACGC CGCGCTCCCT GGTCCTCAAT CCGGCCGCTCG TGAATGGACCG 6320
```

3e/3

-14-

REPLACEMENT SHEET

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6321  GGCCACGGCG GACGAGGTGG CGGACGGGCT GGACTCGGTG  CTGCGGCGGC TGGCACCCGA CGGGCGGGATC GGCGCGGCCC  6400
           stop cvm6par →
6401  CCCGGCGGGG GTGACGAGAC CGCGGGCCGC CACCCGCGGG  GGGCGCCGGG TCGGCACAGC GGCCGACCCG GCGGCCTTCCC  6480
6481  CGTTTCCCGG CGCCTTTTCC GTGCCCCGGC GCCGTTCCCG  TGGCCCCTGC CCCTGCCCCT GCTCGGGCGC TCCTCCCTCC  6560
6561  GCTGTGGCGC CGTTCCCCGTT CCAGCGCGCT GTCGAGCCGC  CGCCAAGCGC CCGTGCCAC GGTGGGAGAC CGCCGCCCGA  6640
                                                          start orf6par
6641  CGGGGCGCGC GGAGCCCCGC AAGCCAAGG GAAGTCCCGT  CCGATGCGTG CCTCTTCGCC CAGAGGGTTC CGCGTGCACC  6720
6721  ACGGTCACGC CGGGATCAGG GGGTCCCACG CGGACCTTCGC  CGTCATCGCC TCCGACGTTC CCGCGGCGGT CGGGCCGGTG  6800
6801  TTCACCCGTT CGCGGTTCGC CGCGCCCGAGT GTGCTGCTCA  GCCGGGACGC GGTCGCCGAC GGGATCGCCC GGGGGCGTGGT  6880
6881  GGTGCTCGTCC GGCAACCCCA ACGCCGGGAC GGGCCCCGCGG  GGGTACGAGG ACGCCGCGGA GGTGCGCCAT CTGGTGGCCG  6960
6961  GGATCGTCGA CTGCGACGAG AGGGATGTGC TGATCGCCTC  CACGGGACCC GTCGGCGAGC GGTATCCGAT GTCCCGTGTC  7040
7041  CGGGCCCATC TGCCGGGCGGT GCCGGGCCCC TTACCGGGTG  CCGACTTCGA CGGGCCGCGG GCGGCCGTGC TGGGCACCGG  7120
7121  GGGGCGCCGT CCCACGATCC GGGCGGCGCG GTGCGGCGAC  GCGACGCTGA TCGGTGTCGC CAAGGGCCCG GGTACGGGCC  7200
7201  CGGCGGAGCA GGACGACCGG TCGACGCCTGG CGTTCTTCTG  CACGGACGCC CAGGTGAGCC CCGTCGTCCT CGACGACATC  7280
7281  TTCCGGCGGG TCGGCGGACCG CGCCTTCCAC GGGCTGGGCT  TCGGCGCCGA CGCCTCCACC GGCGACACGG CGGCCGTTCT  7360
7361  CGCCAACGGG CTCGCGGGCC GGGTGGACCT CGTCGCGTTC  GAACAGGTCC TGGGCGCGCT GGCGCTGGAC CTGGTCAGGG  7440
7441  ACGTCGTCCG GGACAGCGGC TGCGGCGGCG CCCTGGTCAC  GGTGCGGGTC ACCGGGGCCC ACGACACCGA GCAGGCCGGG  7520
```

3f/3

REPLACEMENT SHEET

```
7521 CGCCTGGGCC GGGCGGTGGT CGACGCGCCG TCGCTGAGGG CCGCGGTGCA CGGCCCGGCA CCCGACTGGG CGCCGGTCGC 7600
7601 CGCCGGTGGCG GGTGGACACG GGGACGAAGG CCCCGGGCGG TCTCCCGGGC GGATCACGAT CCGGGTCGGC GGCCGGGAGG 7680
7681 TCTTCCCCGC CCCCCGGCAC CGGGCCCGCC CGGACGCCGT CACCGCGTAT CCGCACGGCG GCGAGGTGAC CGTCCATATC 7760
7761 GACCTCGGTG TCCCGGGCCG GGCGCCCGGC GCGTTCACGG TCCACGGCTG CGACCTCCTG GCGGGGTACC CGCGCCTCGG 7840
     stop orf6par
7841 CGCCGGCCGG GCCGTCTGAA CGGGCGCTCC CGGGCGGACG GCGACCGCGA GGGCGCGGGA GGGCAGGGAA CACGGGAGCG 7920
                                                                           stop orf4par
7921 GGCCCGGTGG TCGATCGGCC ACCCGGCCCG CTCCCGTCGT TCCGTCCGCT GTCCCCGCGC GCCCTACCCC CACCGCTGCC 8000
8001 CGGCGAAGTC CACGGCGCTC TCGGCGTCCA CCGCGTCCAC CGCGTTCTCG GCGTTCTCGG CGTCGTCCGC CGCCGCCCCC 8080
8081 GGTGGCAGGG GAGAGTCCAC CGGTGCCGAC GCGGGGCACG TGGTGGCGCG GGCGTACTGG TAGAGCAGTT CGGCCCCGAT 8160
8161 CTCCGCCGCC AGCAGGGAGG TGATCCCCGA CGGGTCGTAC GCCGGGGACA CCTCGACCAC GTCGAAGCCG ACGGGCCTGA 8240
8241 GCTGCCCGAC CACGTCGAGC AGGGTCAGCA CCTCGCCGA CCGGGGGCCG GTGTGCCGGT GCCCGGGGCG 8320
8321 TACGCCGGGT CGACGACGTC GATGTCGACG GAGACGTACA GCGGCAGGCC GCCGACGGTG CGCCGGATCT GCTCGGCGAT 8400
8401 GCCGCGCGGT GAGCGCCGGG TGAAGTCGGC GGCGGTGACG ATGCTGACGC CGTGCCCGCG CGCGTAGTCC AGGGAGTCGG 8480
8481 GCCGCGGATT GTGGCCGCGG ATGCCGACCT GGACCAGGCG CTCCGGGTCC ACCAGGCCCT CTTCGATGGC CCAGCGGAAG 8560
8561 GGGGTGCCGT GGTGGTAGGT GCCGCCCGTAG ACGGGGTGGGT TGGTGTCGCT GTGCCGGTCC AGGTGCAGGA CGGCGACCCG 8640
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3g/3

-16-

REPLACEMENT SHEET

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8641  GCCGTGGCGG GCGTGCACGG CGGCGCAGGGC GGCCAGGGAG  AGCGAGTGGT CCCCGCCCAG CATCAGGAAC GCGTCGTTGC 8720
8721  GTTCCAGGAG CCGGGTCAGG GCGACCGTCG CGGTGTCCAT  CGCCAGGTCC ATCGAGAAGG GGCTGAGGTC GATGTCGCCC 8800
8801  CCGTCGACCA CGTCGATCCG GTCGAAGACC CCTGGGCCCC  GGTCGATGCC GACGCCGTGG ATCAGGCTGG ACTCGTGCCG 8880
8881  GATGGCGCGC GGCGCGGAACC GCGCGCCGGG CCGGTAGCTG  GTGCCTCCGT CGTACGGGGC GCCGACGACC ACCACGTCAT 8960
                                                                                start orf4par →
8961  GGCCGATCGG GTCGGGCCGG TGGCGCAGCC GCATGAAGGT  CGCCGGTTGG GCGTAGCGCG GGAGACGGC GGTGGACACC 9040
9041  CTGGCCGTTC CCGGCGCACC CGGCCCTGCT CCCGTTCCCG  TACCGACGCC CGGCCACCCC GTGCGGGCTC CCGTTCCCGT 9120
      orf3par
9121  GCCGACCCCC GTTCCCGGAAC GGGCTCCCGT TCCCGCGTGG  AATCCCGTTC CCGCGCCCGC GGCGCCGTCC GGGCCGCGGC 9200
9201  TGCCCCTCCC TCCGAGACCG CTCCTGCGCT TCCTGCGCC   GTTGCCGCTC TGCGGGCCGG TGCCCGCGCC CACGCCCGCT 9280
                                                                                → stop
9281  GCACCGTCCG CGCCGCCGCC GGTGCCGTTG CCGCGCCGCG  TGCCGTTCTG GCCACCGGTG CCGTTCTGGC CGCTCATACG 9360
      orf3par
9361  ACCACCCGGC CCTGGAGCCT GAGCGCTGCGC ACCGCGTCGA  CGGAGCGCCG CACCGTCTCG CCGAAGTCCA CGTCCTCCGG 9440
9441  CGGCACCGTG TCGATGACCA CCGCGTCGTA CAGGCGCCGT  GCCATGGCGC CCTTGACGGC CGTCACCTCG TCGGCGCCGGA 9520
9521  TCCCTTCGGC GAGGAGCAGT CCGGTCCACG CGCTGGTGGT  GCCGGACCCC TCGTGGATGC CCAGCTTGGG GCGGGGCCACG 9600
9601  GTCTCGGCGG GCAGCAGGCC GGAGAGGGCC TGCCGCAACA  CCCACTTGTC GGTGCCCCGC CGGCGGTTTGA GCCCGGGGTTC 9680
9681  GAGGGAGACC AGCGCGCGTCCA GGACCGCGCG GTCCCAGTAC  GGGTGGGGTGG TCCACTTCCC GGGCGATGCCC GCGAGGACGG 9760
```

3h/3

-17-

REPLACEMENT SHEET

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9761  GGGACATCTC GTTGAGGCCG TCGAAGCCCG CCATGTCGCC CGCGATCTCG TCGTCGAGGG ACCAGAGGCGA GGCCGTGCGC  9840
9841  CGGTGCATAC CGCCGAGCGG GATGTCGGCG CCGTACCCGG TGAGGATGCG GAGCGGCCCG GTGTCGAGCC GCCGGTAGAG  9920
9921  GGCGACGAGC GGCAGCAGGT ACTCCAGGAC CGTGGGGTCG GTGATCTCCG CGGCGGCGAC CGCCCAGGGC AGTTCCCTGA  10000
10001 CGAGTTCGGC CGAGTGGAGC CGGATCTCGC TGTGCGCGGT GCCCAGGTGG ACGGGCGACCG AGCGGGCGCGC GTCGAACTCG  10080
10081 TCGGACACCT CGGTGCCCAT CGACACGGAC CGTGTCCCGG GTGCCAGGGC CGCCGTGTGG GCGGCGACTC CCCCGGAGTC  10160
10161 GATGCGGCCG GACAGGACGA CGGTGGGGGC CGCCTCCCCG CCGCGCAGCC GGGTGCGGAC CGCCGTGGCG AGGCGTTCGC  10240
10241 CGACCAGGTC CACCGCCTCC CGTTCGCCGG GCAGCGCCCG GGAGAGCGGG GGTGTCCAGG TGCGGACCGC CCTGGCCGGTG  10320
10321 ATGTCGGAGC CGCCGACTCC GTGCAGCAGG AGGGCGGTCC CGGCGGGGAC CCCGCAGACG CCCGCCGCCC CCGGGCGCGGT  10400
10401 GTGGGTGCCG GACAGGCCCA GCGGCCGCCA CGGCCGCGCC GCCAGGGTCT TCGCCTCGGT GGCGGCGCTC AGCCCCGTCA  10480
10481 CGTCGGCGCG CAGCCACAGC GGTACCGAAC CGGCGTGGTC GGTGGCCGCG ACGGTCGCGC CGGTGGAGGC GTCGGTGAGC  10560
10561 AGTGCGGCGA ACCGTCCGTT CAGGAGCCGG AAGGCCCCGG GGCCCCAGCG CCGCCAGGCG GCCAGCAGCA GTTCGGCGTC  10640
10641 GCCGAGGGCG GCAGAGGAGC CGCCGAGCGC TCCGGTCAGC TCGGCGCGGT TGTACAGCTC GCCCGCCAGG AGCAGCCGGA  10720
10721 CCTGGCCGTC GGCGACCAGG ACGGGCGGAC GGCCCAGGGT CACGGCCGTT CCGCTCCAGA GCGGGTACGC GGTGCCGTCG  10800
10801 TGCACGGGGA CATGGGGTCC GCGGACGGCG AAGCGGGGTG CGCTGCCGGG TTCGGAGTGA CGCCGGGGGC CGCCGCCGGG  10880
                                                          start orf3par ←
10881 GCGGCCCTCG GTGCCGATGC GCACCCGGAA TCCGTACACG AGGTCGGGGC CGGGCATGGT GAACTCGTCC TCCACGGTGG  10960
      ← end orf2par
10961 TCAGATGGCC AGGGCGGCGA AACCGCCGGA CTGGAAGTCG TAGGCCACCG GTACCTCGAT CAGGAACGGG CGGCCCAGTC  11040
```

3i/3

REPLACEMENT SHEET

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11041  CGGCGCCCTT GGTGAGGGCG GCGAGCAGCG AGGTGCGGTC  GGTGGCGCGG ACGGGCCTCGC AGCCGTTGGC CTCGGCGGAGC 11120
11121  TGGACGAAGT CGACGCTTCC GAAGCCGACG GCGGGGGCGT  GGGAGCGCTG GTGTCCCGAGG TTCTGGTACA GCTCGATCAG 11200
11201  GCCGTTGCGG TCGTTGTTGA CGACGACCAT GACGATCGGC  AGGCCCAGGC GCACGGCCGT CTCGATGTCG GCGCTGTTGG 11280
11281  AGTGGAAGCC GCCGTCGCCC GCGATGAGGA AGACGGGCTC  GCCGGGCCGG GCGATCTGGG CGGCCATGGC GGCGGGCAGT 11360
11361  CCGTAGCCGA AGCTGGAGCA GCCCCGCGGAG GTGAGGAATC  CGTACGGCTG GTCGGACTTG GCCAAGAGCA CGCCGTAGTG 11440
11441  GCGGAAGAAG CCGATGTCGC TGACCAAGGT GCCGTTGTCG  AGGACGGAGT TCATGCAGTC GATCACCTGG TGGACCCGCA 11520
11521  TGCCCGTCCTC GTACTCGGTG GGGTCGGCGA GGAATTCGGC  GACGCGGGCG CGCAGGGCGC TGAGGTCGTG CCGGGTCTTG 11600
11601  GGGGCGAGGC CCGAGGTCGC GTCGTCGAGC GCGGTGACGA  ATTCGGCGAC GTTGGTGACG ATGTCGATGT CGGCGCGGAA 11680
11681  CAGCTCCGGG ATCGGGTTGA CCTCGGGGGC GACCCGACC   GTGGTCTTGG CCCGGCCCCG CGTCCACATG GAGGGCGCA 11760
11761  GGTCCTCGGC GTAGTCGTAG CCGATCGCCA GGAGGAGTC  GGCGGGGCCG AAGATCTCGT CGAGGGCCGG GTGGCCGAGA 11840
11841  ATGCCGTCCA TGTAGCCGCT GATGGCGCCG TAGTTGAGCG  GGTGGTCGTG CGGCAGGACG CCCTTGGCGG TGTAGGTGGT 11920
11921  GACGACGGGG ATGTTCAGCC GCTCGGCGAG GGCGCGCAGG  GGCTCGACGG CCCCGGCGCG GATGACGGCG CTACCGACGA 12000
12001  CGAGGAGGGG GTTCTCCGGCC TCGCGCACCA GCTCAGCGGC  CTCGTCGAGG CGGGGCGCGCC AGTCGGCGTC CAGGGCGTGG 12080
12081  GTGGCGGTGG CCCGGACCAG GGGGGCGGTCG GTGGGGGTGC  CGTTCAGCTC GGCGCCCGAGG AGGTCGACCG GCAGGCTGAT 12160
12161  GAAGCTGGGA CCCACGGGCT CGATCCGGCT GTTGAGGACG  GCGCTGTCGA CGAGGTTGAC GATGTCCTCG CCGCGTTCGA 12240
```

3j/3

NEW SHEET

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12241  GCTGGACGCT GAACTTGGTC AGCGGGCCCA TCACGGCGGT GCTGTCCAGG CACTGGTGGG TGACGTTGGG GTAGCAGTCG  12320
12321  TACGACTCGG ACTGCGCGGC CAGCGCGATG ACCGAGCTGC GGTCCAGGGC GGAGGTGGCG ACGCCGGTGG CCAGGTTGGT  12400
12401  CATGCCGGGG CCCAGGGTCG CGAAGCACGC CTGGGGGCGG TTGGTGATCC GGGCGAGGAC GTCCGCCATC ACCCCGGCGG  12480
12481  TGAACTCGTG CCGGGTCAGG ACGAAGTCGA GTCCTTCGAC CTCGTCGAAG AGAATGGCGG ACGCCTCCCG GCCGACGACG  12560
                                                              start of orf2par
12561  CCGAATACAT GGTCGACACC GTACTGGTGA AGACGTTCCA GCATGGCTTT CGCGGTCGTG GTGGCCATGG AGATCTCCTT  12640
12641  CGCATCGGAC GGGCGCCGGG ATGGCGCCCC GGAAAACGCG GCACCGGGCG GTGCCGCACCG GGTGGCGCAC ACCGTGGGTG  12720
12721  GTGGCGTTGC CACTGTGCGG ATCGCCTCTT GGCGGGCGTC GGACGCCCGG CTTGGACAGA ATGGGCCAAGG CGCGTTCAAG  12800
12801  GCATGGCGTC CATCGTCCTC GTGGCGCTTT TCGTGAAATC CGTCCGGCGC CGACGGTCTC CATCCGATTC CGTCCCCTTC  12880
12881  CGTCCACCGA TCCGAGGAGA ATCCATGGAT GTCCTGGCCG CGTTGGAGCG CAAGCCCAGC CTGAATCTTT TCCCCATCGA  12960
12961  GAACCGGCTG TCGCCGCGCG CCAGTGCCGC GCTGGCCACC GACGCCGTCA ACCGCTATCC GTACTCCGAG ACCCCGGTGG  13040
13041  CCGTCTACGG CGATGTCACG GGGCTGGCCG AGGTGTACGC GTACTGCGAG GACCTGGCCA AGCGCTTCTT CGGGGCGCGC  13120
13121  CACGCCGGTG TGCAGTTCCT GTCCCGGTCTG CACACCATGC ACACCGTGCT GACCGCCCTG ACCCCGCCCG GCGGGCGCGT  13200
13201  CCTGGTCCTC GCGCCGGAGG ACGGCGGCCA CTACGCCACG GTGACGATCT GCCGGGGCTT CGGCTACGAG GTCGAGTTCT  13280
13281  TACCTTCGAC CGCCGGACAC CTGGAGATCG ACT                                                       13313
              |         |         |         |         |         |         |         |
             10        20        30        40        50        60        70        80
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(SEQ ID NO:16)

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